

An Address

ON

EUGENICS—AND THE DOCTOR*

BY

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I propose in the first instance to discuss what is meant by eugenics, then to deal with the attitude of the public towards eugenics, and lastly to consider the position of the doctor in relation to eugenics.

The science and practice of eugenics began with Sir Francis Galton fifty years ago. It is noteworthy that the credit of introducing this important aspect of preventive medicine, and also the credit of founding the whole practice of preventive medicine, which we owe to Edward Jenner fifty years before Galton's work, belong to two Englishmen. Galton defined his own word "eugenics," as "the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally." The basis of eugenics is therefore a biological affair, and its aim is to institute control, so far as this is possible, over the biological factors in human health and human happiness. Our American cousins, who have a happy knack of hitting off the simple essentials of social activities by expressive names, have a society which they call "The Human Betterment Foundation," and the aims of this society are very similar to those of our "Eugenics Society." It will be seen that Galton's definition includes two main influences which it is proposed to place under social control for the benefit of the race—the influence of environment during the individual's lifetime, and the influence of heredity in the begetting of a new individual. These two agencies are, as we know, inclusive of all the factors upon which the future generation is improved or impaired. Whilst being entirely sympathetic towards all environmental agencies that make for human betterment, our own Eugenics Society does not engage directly in any of these. Its policy and its work are directed almost entirely towards the better endowment of future generations through the study of heredity, and the practice of the indications for racial improvement which such researches yield.

Of the *moral* basis of eugenics I shall speak later. The *scientific* basis is our knowledge that like tends to breed like, and that the children of parents possessed of natural qualities which are above or below the average will probably themselves be above or below the average in respect of this same quality.

When racial improvement takes place in nature it does so by a process of natural selection. That is, all types, good and bad, being reproduced in unrestricted numbers, over-population takes place, with a struggle for existence, during which those individuals less capable of survival are eliminated in early life. This natural process is a brutal one, but is very effective. Modern civilization has changed all this, partly through the restriction of families, partly through those so-called humanitarian efforts by which weak types are preserved as long as possible, and are allowed to breed, and, now and again, by war. Unfortunately several of these modern interruptions of natural processes tend inevitably towards deterioration of the individuals in successive generations, and, therefore, eventually to deterioration of the race. Eugenics

aims first of all at improving upon natural selection by introducing control over the reproduction of unfit types, such as the mentally deficient, and by encouraging fertility among types possessed of qualities that are above the average. There is therefore a dual purpose in eugenics: it is negative in its attitude towards the unfit, it is positive in its attitude towards the fit. Throughout the whole of its efforts in this country it seeks only to operate by voluntary measures, thus doing nothing by which the liberty of the individual may be infringed. Such an ideal as this last-named presupposes for success the development in society of a eugenic sense, and it is hoped that such a sense will arise, and will spread, when it is once realized how dependent future generations are upon inherited qualities, and how possible it is to control the transmission of good qualities on the one hand and to check the transmission of bad qualities on the other.

A recent national stocktaking shows some very unpalatable facts. In 1917-18 we were all of us staggered to find that of the possible recruits of 17 to 18 years of age only one in three was perfectly sound. To-day it is estimated that one in 120 persons is feeble-minded, one in 200 is insane, and one in ten is too dull, or is too sickly, to be capable of being absorbed into industry. The expense to the nation of educating and caring for all these inefficient is enormous. But this is not so serious, by far, as is the fact that the future stock is being continually recruited from these inefficient.

THE PRACTICE OF EUGENICS

Let me now pass in review some of the measures by which eugenics may hope to change all this. The Eugenics Society advocates the voluntary sterilization, under proper safeguards, of mental defectives, mental convalescents, and persons who suffer from gross mental and physical defects that are proved to be transmissible. Compulsory sterilization of such individuals, though legally enforced in some countries, is not advocated here. At present the operation of sterilization, even if desired by the patient and his responsible relatives, is probably an actionable offence in Great Britain. In the matter of birth control it is suggested that local authorities should be empowered to provide, under medical supervision, instruction in contraceptive methods for married women who ask for it on economic and eugenic grounds, in addition to gynaecological and medical grounds, which are those on which alone such instruction can be given at present. This is a serious position as it now stands because the practice of birth control, from want of adequate knowledge, is prone to act dysgenically rather than eugenically upon the whole community. Another serious result of the veto put upon the spread of contraceptive methods is that the practice of abortion is indirectly encouraged. The segregation of mental defectives and mental convalescents, as complementary to sterilization, is also recommended.

Another measure that should tend towards improving the stock is a scientifically designed system of family allowances, so as to equalize the standard of living between parents and non-parents doing equivalent work. And still another is to amend the present system of income-tax allowances, and to extend it, so as to make taxation less where the expense of bringing up children is greater.

While these and supplementary measures constitute the *practice* of eugenics, *research* into the problems of heredity is being constantly encouraged and carried out. And in order to encourage that eugenic conscience which, once more, is indispensable if voluntary, rather than compulsory, measures are to be adopted, it is urged that instruction in biology be included in all school curricula.

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ATTITUDE OF THE PUBLIC

What, now, is the reaction of society towards the problems of the mentally and physically unfit, and towards the practice of eugenics? In the minds of the great majority of people there is no reaction at all. Either from sheer exigency, or from a fundamental inability to think clearly, there is a dull acceptance of the facts of life as they are. Indifference, with a steady drift to a worse state of things as a consequence. In the minds of those more fortunately situated, and who are able to project the problem outside themselves and think about it, the reaction differs considerably. One section of these, meliorist in type, regarding this as being the best of all possible worlds, considers an effort to exercise biological control over heredity as meddling interference. To improve the individual by environmental influences they allow to be a good thing, but to "tamper with Nature," as the phrase goes, gives them a mental shock, and they gasp at the thought of such boldness. This seems to be due to mere lack of imagination. Every time we prolong the life of an individual who, but for our humanitarian efforts, would die an early death, we also, of course, interfere with Nature. Eugenics proposes to exercise interference at an earlier stage in the natural process; that is really the only difference.

Another section of the thinking public has got the question of racial improvement mixed up with religion. And unfortunately, when this is so, the entanglement seems invariably to influence them in the direction of opposing, rather than supporting, active measures of a eugenic kind. It would be interesting to discuss the meaning of this lien which religion holds in some minds over biological processes and our control of them. But this would lead to a long digression. The primitive association of procreation with magic, and, later, with divine influence, seems to be the origin of this attitude of mind. We must not forget that it is only in quite recent times that the biological facts underlying conception and childbirth have been known. Prior to this the appearance on the earth of a new individual was, not unreasonably, regarded as a direct act of Providence. If we add to this the fact that physically and mentally deficient offspring were by many races deemed to be possessed of some special sign of grace, we may see how deeply rooted is this prejudice against efforts at control in the sphere of eugenics. How far we are from getting sanctions for eugenic activities from this particular section of the community may be judged by two sentences taken from a speech made by the Bishop of Exeter, Lord William Cecil, at the Lambeth Conference three years ago. Said the Bishop: "If the Lambeth Conference should approve of birth control . . . then there will be a new breach in the growing unity of Christendom." And he continued: "If life has been sweet to us why should we deprive others of the privilege we value and enjoy? Every child deprived of the privilege of life is treated cruelly and unjustly. . . ." I resist the temptation to make my own comments, but I will quote those of Mr. Pitt-Rivers. "From this utterance," he says, "those of us with lively imaginations may conjure up the sorrowful sound, among the unborn hosts, of the indignant protests of countless aments and dements," frustrated in their desire to "gibber their inarticulate joys and sorrows in this mundane vale of tears."

ALTRUISM AND EUGENICS

But there is a third section of the thinking public, a section which is slowly growing, which has developed

the eugenic conscience of which I spoke. Its attitude of mind is the converse of that which is expressed in the old question: "What has posterity done for me?" There is, of course, no bargaining with posterity. But in the matter of human betterment there is no bargaining with our contemporaries either. The desire and the will to do our fellow creatures a service—"a good turn"—are things outside the possibility of contracts. They express one of the most fundamental impulses in human nature, an impulse which has slowly, probably painfully, evolved with the moral progress of the race, and has become, for some folk, so intertwined with their very nature that it seems at times more fundamental in them than their religion itself, or certainly than their religious concepts. This instinct has withstood much analysis by psychologists and much scorn from philosophers. So far as can be judged, this altruistic spirit runs parallel with the evolution of the human race on its moral side; indeed, it is perhaps the best expression of this evolution. If so, it must increase, not decrease. Like all other human motives its effectiveness in the dynamic sense depends upon science, which marches side by side with it, and, like it, is constantly advancing. These two things, linked together—the spirit of altruism, and science, which can make altruism a practical affair—these together must of necessity lead us to be sympathetic towards eugenic efforts.

In an age when the facts of heredity were unknown, and the trend of racial development was hidden, this spirit of devotion to the welfare of others directed itself, quite naturally, to a man's contemporaries. And this is still a fruitful field for its seed-sowing. But in the light of modern biological knowledge we must surely feel it our duty to project this altruism forward to those who follow us, seeing that it is so certain that their welfare depends largely upon the generations that go before. In the eugenic sense the answer to the question "Who is my neighbour?" becomes "The human being who comes after you and who becomes what he will because of you." A new reading is given by eugenics to the Latin tag: "Quis cito dat, bis dat." And I suppose it might also be urged that even the Boy Scout's day's good deed is a better thing done early in the day than late.

If I may refer once more to religion, for in this section of the community of which I am now speaking are many for whom religion is a very real thing, I would say that I hope at long last we have got rid of the old notion that there is any opposition between religion and science. It were indeed a sad stricture upon religion if our concept of it may not include whatever added value comes from that control over life which science gives us. Equally would it be a sad stricture if the concept of religion may include control over the physical elements of air, earth, and water, so that these become our servants and not our masters, yet denies recognition of control on the biological plane, which is so much more vital, and is so much more closely bound up with our happiness and our blessedness. No; we must believe that religious thought and emotion, permeating the whole conduct of life as they do, or are alleged to do, and giving conduct its direction—we must believe that these things are an incentive to every activity which makes for betterment in the moral and in the physical state of our children and of our children's children. Or else—for I see no third alternative—there is some flaw in ourselves, some smoke in the flame, some hostile animus in the ego, which obstructs us in the full employment of the best thing we have so far snatched from the beasts—a warm and yearning desire to do good to our fellow men.

THE DOCTOR'S POSITION

I now pass to the third part of my subject. What of the doctor in relation to all this? There are those who hold that, as the doctor is the servant of the community and of the State (which is only the organized community), he should wait upon public opinion before offering his help in furthering eugenic efforts. In so far as this means that it is no part of the doctor's function to act as publicist, or even as reformer, in this or any other matter affecting the public weal, I am in agreement with the principle. I am wont to say that when a doctor becomes a publicist he ceases to be a good doctor. I have a lot of evidence on this point. Medicine is a jealous mistress and does not tolerate rival attractions. Moreover, a doctor's chief function is personal and not public. I am speaking now of the general practitioner. But since the basis of eugenics is the laws governing heredity and the facts relating to heredity, it follows that the practical interest of the doctor in these things must be aroused, and kept awake, in order to accumulate reliable data upon which to proceed. And no set of men and women can make such valuable contributions to the science of heredity as those who are engaged in the study and practice of medicine. At the present time there are several ways in which these useful contributions can be made.

GENETICS IN THE MEDICAL CURRICULUM

The facts already known in relation to genetics should be taught as part of the medical student's curriculum. It is quite true that the medical curriculum is already over-full. But if something which is relatively less important were taken out—and there is a great deal that is relatively unimportant when compared with the study of heredity—room might easily be provided. In the curriculum as it stands the only fragment of genetics that the student comes across is a little elementary embryology. Here and there, later in his clinical work, are scattered items of a detached sort, such as the fact that certain rather rare diseases, like colour-blindness and bleeding, have familial and sex qualities in their transmission. But of the general principles involved in genetics, and how to apply these to particular cases, the student learns nothing. I doubt very much if many doctors emerge duly qualified from their six years of study able to state precisely what it was that Mendel discovered in connexion with heredity.

This being so, enormous opportunities for adding to our knowledge of genetics are lost by the lack of training, and therefore lack of interest, and by ignorance of how to collect valuable facts, among practitioners. The "family histories" of patients are of such a meagre kind that they are almost useless to the expert when he comes to study diseases in which inheritance plays an important part. Even the notes taken about patients during their stay in hospitals, where facilities in this direction are much greater, are extremely scanty where heredity is concerned.

But perhaps, after all, we must not expect the busy practitioner to give up the necessary time to these matters. Here and there are a few whose routine admits of special attention being given to an adequate investigation into the heredity factor in the incidence and characters of certain disease-processes which present themselves. And there crops up, now and again, even in a busy practice, the man who is attracted by such an investigation, and who adds quite materially to our knowledge by his painstaking researches. We must not forget that the father of preventive medicine was himself a busy English general practitioner, and what Edward Jenner did one

hundred years ago others can do to-day. But for the most part such studies as I am now discussing are impracticable in the sphere of everyday curative medicine. I have already pointed out that eugenics is really a branch of preventive medicine, and a branch that is fraught with a deeper and more lasting effect than any other. Just as the public health service requires special training and special experience amongst its officers, so genetics, to be properly followed, and to be made a scientific basis for practical measures for human betterment, demands a number of doctors who shall give up their whole time to this purpose. In other words, for the thorough pursuit of this study there should be, attached to the Ministry of Health, a small group of medical men and women, to whom the vital statistics connected with life and death and disease should be readily available on the one hand, and contact with hospitals and with general practitioners, so as to be in touch with clinical material, should be possible on the other.

QUESTIONS AWAITING ANSWERS

The questions which await answers from such intensive study by such a group of workers are both important and numerous. There are very large gaps in our knowledge of the causes of disease which cannot be filled until we have information about the heredity factors entering into them. But even of greater importance than the influence of heredity in the production of actual organic disease, as it seems to me, is its operation in the prevalence of defective types as regards function and resistance. Again and again, after the most careful and detailed examination of patients, are we left with the inescapable conclusion that the material is bad, has been bad from the beginning, or has become bad prematurely. Whether it be the nervous system or the heart or the blood vessels or the kidneys—and the list by no means ends here—there are individuals, and there are families, in which the stuff yields too soon, or yields even before the main stress of function comes upon it at all. Why does the neurasthenic state dog some people's lives from the very start? What do they really mean when they say "I was always very highly strung"? Why do the members of certain families all develop heart disease at a certain age? Why do one man's arteries last for eighty years and another man's fail at forty? In most cases we are quite ignorant of the answer. And yet there must be an answer. Can there be much doubt that we should find the answer in the study of genetics? Then the very important question of resistance of the tissues, and of the individual as a whole, to microbic infection; how little we really know about this!

Anthropology overlaps very closely with genetics. This is readily understood. Indeed, it was Galton's painstaking investigations in anthropology which led him to the conception of the extension of preventive medicine which he bequeathed to us under the name "eugenics." Stature, bulk, complexion, and a number of other characters and attributes, and the ways in which these are affected by intermarriage. Why is the rheumatic child, *par excellence*, a blonde, and why so often a rufous blonde? What is the nature of this strange connexion between the pigment of the skin and hair and infection by the rheumatic virus?

And the psychological problems that we meet, though doubtless still more difficult, do not many of them go back much farther in their origins than the beginnings of the complexes which the psychologists unearth in such dramatic fashion? What is the flaw that attracts the complex, and when did the flaw first appear? Surely, again, the explanation lies hidden in heredity and requires genetic research for its discovery.

EUGENICS AND GENERAL PRACTICE

Until the doctor knows more about heredity he cannot properly advise young persons who consult him on the question of marriage because they have a growing consciousness that their duty to their offspring is no longer entirely covered by feeding, housing, and educating it, but that something can, and should, be done to protect it against tendencies to mental and physical defects, and make the stuff of the next generation better than their own. The problem of consanguinity, and its risks to children following marriage, comes more and more frequently before us, and is not an easy one to advise upon at any time. There is an increasing tendency to seek a medical overhaul by both parties prior to marriage, or even prior to engagement, and some knowledge of the laws of heredity is essential if helpful advice is to be given. It would be a sad thing if the growth of a eugenic conscience in the community anticipated sound knowledge on the part of the medical profession. Yet such a possibility is by no means a remote one. I am not sure that many of us have not been already caught with our lamps unlit in the matter of giving advice on contraception, when patients show a reasonable desire to exchange the casual, half-surreptitious, and rubber-shop affair that birth control has largely been

so far, for a really sound and scientific statement of the position, and for precise directions adapted to the particular indications of the case which is presented to us.

It is the duty of the doctor, as guardian of the health and happiness of the individual, to be well informed on all that makes for these desiderata. It is also his duty to the State to know what are the factors tending to racial deterioration, to point them out clearly, to issue the necessary warnings, and to indicate the remedies. He must be in the van in all these matters, for he has special opportunities in regard to them, and he is best fitted to make this contribution to the welfare of his fellows. True, as a servant of the community he must await the development in the community of the will to avail itself of the power of science to improve the stock. But the very fact that he has special knowledge and that he is himself a citizen—which both he and others sometimes forget—constitutes him a natural leader in the march of racial progress, and he cannot conscientiously escape this duty any more than others can conscientiously deny him this privilege. Though he may not force an issue, and though he must not speak before his knowledge is ripe, his position in eugenics is paramount; for without him this newest and most hopeful of the humane sciences must inevitably stand still.

THE LATE SURGICAL COMPLICATIONS
OF FRACTURE OF THE MANDIBLE*

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It is probably safe to say that 90 per cent. of all fractures of the mandible met with in civil life and resulting from riding, hunting, boxing, or motor car accidents will unite soundly in good position, with good dental occlusion, and without loss of external contour, provided they receive a minimum of interference from the surgeon and a maximum of expert attention from the dentist. The ordinary uncomplicated fracture of the lower jaw is, in fact, purely a dental problem, and one which does not often fall within the purview of the surgeon. In about 10 per cent. of patients in civil life, however, late complications ensue requiring operative interference. This figure was, of course, much higher during the war, when gunshot wounds and accidents, entailing much comminution and loss of bone substance, were the rule rather than the exception. The concentration of these patients at the Queen's Hospital, Sidcup, and in other centres during and after the war led to such an accumulation of valuable experience in their treatment that the care of cases in civil life has since then been much improved. Little, indeed, has been added to our knowledge of the subject in the past ten years, while it might even be said that some of the lessons learnt then have been forgotten. In this communication we have not dealt with the immediate treatment of the fractured mandible, but have confined our remarks to a discussion of the later complications of this condition as they have occurred in our experience since the war. These complications may be conveniently grouped according to whether they involve the bone or the surrounding soft parts.

COMPLICATIONS INVOLVING THE BONE

Mal-union

Union in bad position usually results from incorrect or inefficient fixation of the fragments, from unopposed muscular action or from the drag of contracting scar tissue. Except in the case of the edentulous jaw, it is a matter of considerable importance. Good dental occlusion may in fact be termed the prime requisite of successful immediate treatment. Its corollary, symmetrical external contour, is no less important, especially in woman. Mal-union is therefore particularly liable to take place where, with moderate loss of bone substance—that is, with more than 1½ cm.—efforts have been made to secure approximation of the fragments at the expense of dental occlusion. With fractures in the anterior half, the usual deformity is a lingual rotation of the fragments and a corresponding narrowing of the mandibular arch. If these cases are seen early it may be possible to separate the fragments by elastic traction, but if bony union is established and dental treatment unavailing, nothing short of osteotomy and bone grafting will suffice.

Two further deformities following fractures at the angle may result from inability to control a long posterior edentulous fragment. The posterior ramus has a strong tendency to be displaced forwards, upwards, and inwards by muscular action, where it unites with the anterior fragment to produce the well-known "flat angle." Conversely, it may be displaced forwards, upwards, and outwards, the resulting deformity being a marked prominence or outward bowing at the angle, which gives a peculiarly lop-sided appearance to the whole face. Provided good occlusion has been obtained and union is firm, it cannot be too strongly urged that these two deformities are of cosmetic importance only, and should be treated as such. A moderate degree of mal-union in fractures of this type is not incompatible with good function provided the teeth are in alignment. Attempts to control a long posterior edentulous fragment by means of intermaxillary blocks, or by direct fixation within the mouth at the time of the accident, are almost certainly doomed to failure. The only really satisfactory method is that devised by Darcissac and advocated by Ivy and Curtis. Here the angles of the jaw on one or

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